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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/736,446
Filing Date: December 15, 2003
Appellant(s): SCHILLING, HARRY

Kevin L. Daffer
For Appellant

**Supplemental
EXAMINER'S ANSWER**

This is in response to the supplemental appeal brief filed on February 5, 2009 appealing from the Office action mailed on May 23, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| | | |
|-----------------|-------------------|--------|
| 5,535,033 | Guempelein et al. | 7-1996 |
| 2003/0095508 A1 | Kadous et al. | 5-2003 |
| 5,659,368 | Landis | 8-1997 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9-12, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guempelein et al. (U.S. Patent US 5,535,033) in view of Kadous et al. (U.S. Patent Application Publication US 2003/0095508 A1).

Regarding claims 9, 10, and 16, Guempelein discloses a device (fig. 1) for broadband transmission of digital optical signals between at least one first unit and at least one second unit (fig. 1, combination of elements 10, 11, and 12) traveling relative to the first unit (fig. 1, combination of elements 4, 5, and 6) along a given track (column 2, lines 17-53), the device comprising, in association with the first unit: a data source (fig. 1, data source 6) for generating a serial data stream; an optical transmitter (fig. 1,

transmitter 4) for generating optical signals from the serial data stream of the data source; an optical waveguide (fig. 1, fiber 2) for guiding the optical signals generated by the optical transmitter; and also comprising, in association with the second unit: a coupling element (fig. 1, device couple signal to detector) for tapping optical signals from the optical waveguide; an optical receiver (fig. 1, detector 10) for receiving the signals tapped by the coupling element; a data sink (fig. 1, data receiver 12) for further processing the signals received by the optical receiver. Guempelein only differs from the claimed invention in that Guempelein does not specifically disclose an evaluation means comprising a micro controller and memory coupled to the receiver for measuring a value corresponding to an operating characteristic of a transmission path between the transmitter and receiver; and a controller coupled to the data source for receiving the value from the micro controller, and to modify the data rate depending on whether the value differs from a desired value. However, it is a common knowledge that a data transmission system cannot be operated without a controller. Furthermore, it is well known in the art that an optical transmission system comprising controlling means. For example, Kadous of the same filed of endeavor discloses that an optical communication system (paragraph 0129; note that if the information and signals are represented by optical fields, the communication system is an optical communication system) comprising an evaluation means comprising a micro controller (fig. 3, controller 370) and memory (fig. 3, memory 372) coupled to the receiver for measuring a value corresponding to an operating characteristic of a transmission path between the transmitter and receiver (for example, SNR); and a controller (fig. 3, combination of

controller 330 and Tx Data 310) coupled to the data source for receiving the value from the micro controller, and to modify the data rate depending on whether the value differs from a desired value (paragraphs 0088-0096). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the controlling means, as it is disclosed by Kadous, in the system of Guempelein in order to configure the system to maximize the data rate that may be reliably transmitted over the transmission medium between the data source and data receiver.

Regarding claim 11, Kadous further discloses that the controller comprises means for storing data and for controlling the stored data to be transmitted at different data rates by the transmitter (paragraphs 0088-0096).

Regarding claim 12, Kadous further discloses that the desired value is set according to the actually prevailing transmission characteristics (Kadous: SNR) of the data path between the optical transmitter and the optical receiver.

Regarding claim 14, Kadous further discloses that the micro controller (paragraphs 0113 and 0131) is provided for control and diagnosis of the device (measuring the SNR).

Regarding claim 15, the modified system of Guempelein and Kadous differs from the claimed invention in that Guempelein and Kadous do not specifically disclose that the device is self-learning and during operation dynamically adapts to currently prevailing operating conditions. However, the instant specification does not clearly disclose how the system is self-learning. In addition, Guempelein further teaches that

the system is to provide a contactless data transmission device which permits data to be transmitted between system components which are movable relative to each other, in a manner which achieves a continuous data connection, and which is constructed in a simple way and which is immune from interference. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the device of Guempelein and Kadous to be self-learning and during operation dynamically adapts to currently prevailing operating conditions in order to ensure a continuous data connection and immune from interference.

3. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guempelein et al. (U.S. Patent US 5,535,033) in view of Kadous et al. (U.S. Patent Application Publication US 2003/0095508 A1) and further in view of Landis (U.S. Patent US 5,659,368).

Regarding claim 13, the modified system of Guempelein and Kadous differs from the claimed invention in that Guempelein and Kadous do not specifically disclose that an evaluation means is provided between the optical receiver and the data sink; the evaluation means has additional means for signaling incorrectly transmitted data to the controller by means of an auxiliary transmission channel; and the controller is adapted to repeat a transmission of incorrectly received data packages upon request by the evaluation means. However, it is well known in the art to use an evaluation means check the reception of the data and request a retransmission of incorrectly received data packages. For example, Landis discloses to use an evaluation means check the reception of the data and request a retransmission of incorrectly received data

packages (column 4, lines 55-63). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate an evaluation means check the reception of the data and request a retransmission of incorrectly received data packages, as it is disclosed by Landis, in the modified system of Guempelein and Kadous in order to ensure a continuous data connection and immune from interference.

(10) Response to Argument

The following are comparison of drawings of claimed invention and prior art references:

The drawing of *claimed invention* as it was originally filed:

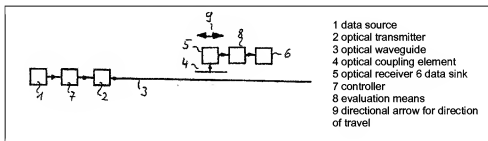
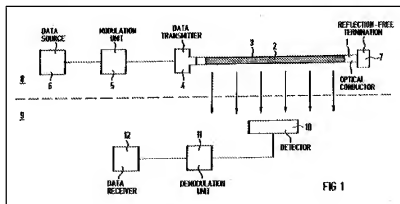


Fig. 1 of **prior art reference Guempelein**:



The amended drawing of *the claimed invention*:

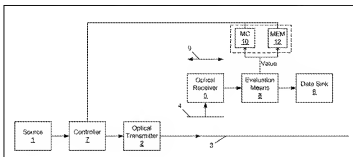


Fig. 1 of prior art reference Guempelein:

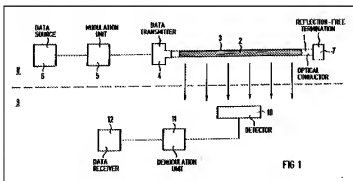
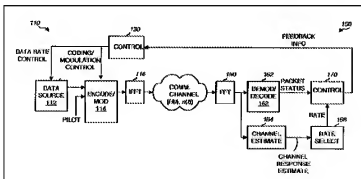


Fig. 1A of prior art reference Kadous:



Appellant argues, “There are no reasons identified as to why a skilled artisan

would have combined a non-measurable optical transmission path of Guempelein with a

measurable non-optical transmission path of Kadous to arrive at the claimed micro controller and memory coupled to an optical receiver for measuring a value corresponding to an operating characteristic of an optical waveguide [sic] transmission path" (First Paragraph on Page 6 of the instant Brief). Examiner respectfully disagrees. Firstly, it is not clear what Appellant means by "a non-measurable optical transmission path of Guempelein". As it is clearly shown in US Patent 5,535,033, Guempelein discloses "a contactless data transmission system including a laterally emitting optical conductor connected to an electro-optical data transmitter" (Abstract), in which the optical data signal is **measured and detected**. Fig. 1 shows the principles of Guempelein's invention, which is similar as the claimed invention illustrated in the drawing of the instant specification (See the above comparison of drawings of claimed invention and prior art references). In the data transmission system, data signals are transmitted in optical fibers 2, and detected with detector 10. **Nowhere does Guempelein disclose or suggest that the system is** "a non-measurable optical transmission path". Secondly, **Kadous is not a "non-optical transmission path"**.

Kadous **particularly and specifically** discloses:

[0129] Those of skill in the art would understand that information and signals may be represented using any of a variety of different technologies and techniques. For example, data, instructions, commands, information, signals, bits, symbols, and chips that may be referenced

throughout the above description may be represented by voltages, currents, electromagnetic waves, magnetic fields or particles, **optical fields** or particles, or any combination thereof.

Obviously, **when the information and signals are represented by optical fields, the communication system of Kadous is an optical communication system.** Thirdly, even if Kadous were a non-optical transmission system, one of ordinary skill in the art still can apply the teaching of signal controlling to a communication system, including an optical communication system. In accordance with the recent U.S. Supreme Court decision in KSR Int'l Co. v. Teleflex, Inc. (U.S. 2007), **"Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle"** (See KSR, 137 S. Ct. at 1742, 82 USPQ2d at 1397).

Examiner realizes that, in accordance with MPEP, the obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves **or in the knowledge generally available to one of ordinary skill in the art.** See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Furthermore, **"Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like**

pieces of a puzzle" (See KSR, 137 S. Ct. at 1742, 82 USPQ2d at 1397). For the instant case, regarding independent claims 9, 10, and 16, Guempelein discloses a device (fig. 1) for broadband transmission of digital optical signals between at least one first unit and at least one second unit (fig. 1, combination of elements 10, 11, and 12) traveling relative to the first unit (fig. 1, combination of elements 4, 5, and 6) along a given track (column 2, lines 17-53), the device comprising, in association with the first unit: a data source (fig. 1, data source 6) for generating a serial data stream; an optical transmitter (fig. 1, transmitter 4) for generating optical signals from the serial data stream of the data source; an optical waveguide (fig. 1, fiber 2) for guiding the optical signals generated by the optical transmitter; and also comprising, in association with the second unit: a coupling element (fig. 1, device couple signal to detector) for tapping optical signals from the optical waveguide; an optical receiver (fig. 1, detector 10) for receiving the signals tapped by the coupling element; a data sink (fig. 1, data receiver 12) for further processing the signals received by the optical receiver. Guempelein **only differs** from the claimed invention in that Guempelein does not specifically disclose an evaluation means comprising a micro controller and memory coupled to the receiver for measuring a value corresponding to an operating characteristic of a transmission path between the transmitter and receiver; and a controller coupled to the data source for receiving the value from the micro controller, and to modify the data rate depending on whether the value differs from a desired value. However, it is well known in the art that an optical transmission system comprising controlling means. For example, Kadous of the same filed of endeavor discloses that communication system comprising an

evaluation means comprising a micro controller (fig. 3, controller 370) and memory (fig. 3, memory 372) coupled to the receiver for measuring a value corresponding to an operating characteristic of a transmission path between the transmitter and receiver (for example, SNR); and a controller (fig. 3, combination of controller 330 and Tx Data 310) coupled to the data source for receiving the value from the micro controller, and to modify the data rate depending on whether the value differs from a desired value (paragraphs 0088-0096). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the controlling means, as it is disclosed by Kadous, in the system of Guempelein in order to configure the system to maximize the data rate that may be reliably transmitted over the transmission medium between the data source and data receiver.

Appellant argues "While Kadous illustrates the feasibility of measuring a value corresponding to an operating characteristic of a transmission path, nowhere in Kadous is there any mention of being able to couple optical signals from a transmission path since Kadous is specifically limited to the problems associated with wireless transmission. As a skilled artisan would know, wireless transmission and, specifically, OFDM modulation in wireless transmission, would not point such an artisan toward optical communication, much less coupling light signals from a waveguide as claimed"

(Second Paragraph on Page 7 of the instant Brief). Examiner respectfully disagrees.

Kadous **particularly and specifically** discloses:

[0129] Those of skill in the art would understand that information and signals may be represented using any of a variety of different technologies and techniques. For example, data, instructions, commands, information, signals, bits, symbols, and chips that may be referenced throughout the above description may be represented by voltages, currents, electromagnetic waves, magnetic fields or particles, **optical fields** or particles, or any combination thereof.

When the information and signals are represented by optical fields, **the communication system of Kadous is an optical communication system.**

Furthermore, **“Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle”** (See KSR, 137 S. Ct. at 1742, 82 USPQ2d at 1397). In addition, **the claimed invention is also associated with wireless transmission** with a broadest reasonable interpretation because **the transmitter and receiver is not directly wired to each other**, as it is clearly illustrated in Fig. 1 of the instant Specification. In accordance with the instant specification, “A coupling element 4 enables a tapping of the signals in a short-range field of a transmitter conductor-structure” (the instant specification, lines 12-13 on page 3). Obviously, in accordance with the instant specification, the received signal of the instant invention is transmitted from the optical waveguide 3 to the coupling element 4 wirelessly. Kadous is undoubtedly an analogous prior art of the instant invention. Therefore, it would have been obvious for one of ordinary skill in the

art at the time when the invention was made to incorporate the controlling means, as it is disclosed by Kadous, in the system of Guempelein in order to configure the system to maximize the data rate that may be reliably transmitted over the transmission medium between the data source and data receiver.

Appellant argues, "There are no reasons identified as to why a skilled artisan would have combined a non-controllable/non-modifiable data rate of optical transmission signals in Guempelein with controllable/modifiable data rate of non-optical transmission signals of Kadous to arrive at the claimed controller for controlling/modifying the data rate of optical signals for and optical receiver" (Third Paragraph on Page 7 of the instant Brief). However, in accordance with MPEP, the obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves **or in the knowledge generally available to one of ordinary skill in the art.** See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Furthermore, **"Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle"** (See KSR, 137 S. Ct. at 1742, 82 USPQ2d at 1397). For the instant case, it would have been obvious for one of ordinary skill in the art at the

time when the invention was made to incorporate the controlling means, as it is disclosed by Kadous, in the system of Guempelein in order to configure the system to maximize the data rate that may be reliably transmitted over the transmission medium between the data source and data receiver.

Appellant argues, "nowhere is there any mention that OFDM, wireless communication, and the problems of OFDM modulation within wireless communication can be ignored and the controlling solution of Kadous be applied to an optical transmitter" (First Paragraph on Page 8 of the instant Brief). Examiner respectfully disagrees. **Kadous specifically discloses that the controlling solution is applicable to an optical transmitter.** Kadous particularly and specifically discloses:

[0129] Those of skill in the art would understand that information and signals may be represented using any of a variety of different technologies and techniques. For example, data, instructions, commands, information, signals, bits, symbols, and chips that may be referenced throughout the above description may be represented by voltages, currents, electromagnetic waves, magnetic fields or particles, **optical fields** or particles, or any combination thereof.

Obviously, **when the information and signals are represented by optical fields, the communication system of Kadous is an optical communication system.** Therefore, Kadous **does apply** controlling to an optical transmitter.

Appellant further argues, "The combination of Guempelein and Kadous (even if properly combined) does not teach, suggest, or motivate modification of the data rate

depending on whether a measured value differs from a desired value. Each of the present independent claims 9, 10, and 16 describe the concepts of "comparing."

Specifically, claims 9, 10, and 16 describe comparing a measured value relative to a desired value. If the measured value differs from the desired value, then the data rate can be modified. Conversely, if the measured value does not differ from the desired value, then the data rate is not modified. Therefore, modification only occurs in certain instances where the comparison yields a positive (or different) result" (First Paragraph on Page 9 of the instant Brief). Examiner respectfully disagrees. As it has been clearly stated in the above rejections, the combination of Guempelein and Kadous discloses each and every limitation cited in claims 9, 10, and 16. Consequently, the data rate of the modified system of Guempelein and Kadous can be modified based on the a value (for example, SNR) of an operating characteristic of a transmission path.

In light of the above discussion, Examiner did clearly establish a prima facie case of obviousness for Claims 9-16.

For the above reasons, it is believed that the rejections should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

(12) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

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Art Unit 2613

Conferees:

/Jason Chan/
Supervisory Patent Examiner, Art Unit 2613

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